tina[2] that it is irrevocably decided during the growth period of an egg whether the female that hatches from that egg will be a male-producer or a female-producer. This is actually proved, it is true, only so far as the effect of chemical substances is concerned. But I am unable to take comfort in the view that sex is determined at a given moment beyond the possibility of reversal by chemical substances, while it is still open to alteration by other external agents. If sex is determined thus a generation in advance in *Asplanchna,* as in *Hydatina,* the starvation experiments referred to above could not have produced positive results; the starvation should have been practised on the mother of the desired male-producer.

In another experiment Mitchell starves a number of young females for a few hours after birth. The first few daughters in each of nine families are used as controls (well fed); they include six male-producers out of a total of 39. The later daughters of the same families are starved; 51 out of 68 prove to be male-producers. The author attributes the higher proportion of male-producers in the latter lot to the check upon nutrition. But, waiving the objection of a rather small number of individuals, another explanation is at hand. It has been shown[3] from 349 families of *Hydatina,* comprising about twelve thousand individuals, that the first few daughters of a family are much less likely to be male-producers than are the later members. If the same relation holds in *Asplanchna,* the numbers of male-producers obtained in the experiment described are about what would have been expected if starvation had not been practised.

In offering this criticism of Mitchell's work I do so in no carping spirit. It is gratifying to find some one using the excellent material which *Asplanchna* affords in an attempt to solve fundamental problems. I have sought only to show wherein lie the weaknesses of the evidence.

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[2] Shull, A. F., "Studies, etc., III. Internal Factors Affecting the Proportion of Male-producers," *Jour. Exp. Zool.,* Vol. 12, No. 2, February, 1912.

[3] Shull, A. F., "Studies, etc." I., *Jour. Exp. Zool.,* Vol. 8, No. 3, May, 1910.

THE AMERICAN PHYSICAL SOCIETY

A regular meeting of the Physical Society was held in Fayerweather Hall, Columbia University, New York City, on Saturday, October 18, 1913. The following papers were presented:

"The Vapor Pressure of Metallic Tungsten," by Irving Langmuir.

"The Form of the Ionization by Impact Function, $a/p = f\ (x/p)$," by Bergen Davis.

"Change of State Solid-liquid at High Pressure," by P. W. Bridgman.

"Notes on Some Integrating Methods in Alternating Current Testing," by Frederick Bedell.

"Silvered Quartz Fibers of Low Resistance Obtained by Cathode Spray," by Horatio B. Williams.

"The Critical Ranges A_2 and A_3 of Pure Iron," by G. K. Burgess and J. J. Crowe.

"A Spectrophotometric Study of the Absorption, Fluorescence and Surface Color of Magnesium Platinum Cyanide," by Frances G. Wick.

"Examination of the Omnicolored Screen Plate by Means of Microscope and Spectroscope," by John B. Taylor.

"Relativity Theory—General Dynamical Principles," by Richard C. Tolman. (By title.)

"The Hall Effect in Liquid and Solid Mercury," by W. N. Fenninger.

"An Electrolytic Determination of the Ratio of Silver to Iodine and the Value of the Faraday," by G. W. Vinal and S. J. Bates.

"Effect of Amalgamation on the Contact E.M.F. of Metals," by F. J. Rogers.

"Relativity Theory; The Equipartition Law in a System of Particles," by Richard C. Tolman. (By title.)

"Failure of Color Photography by Commercial Screen-plate Methods for Spectroscopic Records," by John B. Taylor.

"Condition Involving a Decrease of Primary Current with Increasing Secondary Current," by F. J. Rogers.

"Experiments on the Magnetic Field of Two Electromagnets in Rotation," by S. J. Barnett.

"The Effect of Space Charge and Residual Gases on the Thermionic Current in a High Vacuum," by Irving Langmuir.

Alfred D. Cole,
Secretary